1. **In the Python script, you calculated the sample data to construct a 90% and 99% confidence interval …Report these confidence intervals rounded to two decimal places. See Step 2 in the Python script.**  
     
   The 90% confidence interval is [2.27, 2.5]  
   The 99% confidence interval is [2.2, 2.57]
2. **Interpret both confidence intervals. Make sure to be detailed and precise in your interpretation.**  
     
   The 90% interval says that 90% of the data (assuming a normal distribution) will be contained between 2.27 and 2.5 with the distribution centered around the sample mean 2.38. 90% of the data is ±1.645 times the standard error (0.07071) centered around the mean.  
     
   The 99% interval says 99% of the data is contained between 2.2 and 2.57. This interval is wider because it needs to encompass more data. 90% of the data is ±2.576 times the standard error (0.07071) centered around the mean.
3. **Define the null and alternative hypothesis for this test in mathematical terms and in words.**  
     
   H0: mu = mu0 | m0 = 2.3  
   Ha: mu > mu0The null hypothesis is that the mean is 2.3 cm. The alternative hypothesis is the mean is greater than 2.3.
4. **Report the level of significance.**  
     
   The level of significance is 1% or 99% of the data (1 – alpha).
5. **Include the test statistic and the P-value. See Step 3 in the Python script. (Note that Python methods return two tailed P-values. You must report the correct P-value based on the alternative hypothesis.)**  
     
   The test statistic is: 1.37  
   The two-tailed P-value: 0.1707  
   The P-value considering right-tailed: 0.1707 / 2 or 0.0854 (8.54%).
6. **Provide your conclusion and interpretation of the results. Should the null hypothesis be rejected? Why or why not?**  
     
   Because the P-value of 8.54% is greater than alpha (1%), the null hypothesis should not be rejected – the larger mean could be attributed to chance.